

REMARKS

Favorable reconsideration of this Application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-7 and 9-11 are pending in the present application. Claim 8 has been cancelled, claims 1 and 9 have been amended and claims 10 and 11 have been added by the present amendment.

In the outstanding Office Action, the Information Disclosure Statement (IDS) filed December 16, 2005 was objected to; the Abstract was objected to; claims 1-3, 5 and 7 were rejected under 35 U.S.C. § 103(a) as unpatentable over Federlin et al.; claim 4 was rejected under 35 U.S.C. § 103(a) as unpatentable over Federlin et al. in view of Chen et al.; claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over Federlin et al. in view of Umetsu et al.; and claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Federlin et al. in view of Herchen.

The Abstract has been amended to correspond with U.S. Patent practice and to be less than 150 words. Accordingly, it is respectfully requested the objection to the Abstract be withdrawn.

Further, regarding the objection to the IDS, enclosed are English abstracts of the Japanese documents cited in the previously filed IDS. Accordingly, it is respectfully requested the Examiner acknowledge consideration of these references in the next Action. Enclosed is a copy of the PTO/SB/08 A/B form filed with the IDS on December 16, 2005. Further, the Examiner has not initialed the references cited in the IDS filed on April 20, 2006. Accordingly, it is respectfully requested the Examiner initial these references as well.

In addition, claim 1 has been amended to include the subject matter recited in dependent claim 8. Accordingly, comments will be presented distinguishing independent claim 1 over the rejection of claims 8 and 9 under 35 U.S.C. § 103(a) as unpatentable over Federlin et al. in view of Herchen.

In more detail, amended independent claim 1 includes a combination of elements and is directed to a bipolar electrostatic chuck including a chuck main body having a mounting surface, an annular electrode member which is formed in an annular configuration with a center opening and is fixed onto the mounting surface, an inner electrode member which is disposed at a given clearance from the annular electrode member within the center opening of the annular electrode member and is fixed onto the mounting surface, and an outer electrode member which is disposed at a given clearance from the annular electrode member outside of the annular electrode member and is fixed onto the mounting surface. Further, at the time of assembling, the annular electrode member, the inner electrode member, and the outer electrode member are fixed onto the mounting surface through an adhesive layer which is made of one or two materials selected from a silicone-based adhesive agent and a polyvinyl butyral adhesive agent, respectively, the inner electrode member and the outer electrode member constitute a first electrode, and the annular electrode member constitutes a second electrode, and after use, the annular electrode member, the inner electrode member, and the outer electrode member can be separated from the mounting surface by removing the adhesive layer.

These features are supported at least by FIG. 1 and the corresponding description in the specification. For example, FIG. 1 illustrates at the time of assembling, the annular electrode member 3, the inner electrode member 4, and the outer electrode member 5 are fixed onto the

mounting surface through an adhesive layer 2 which is made of one or two materials selected from a silicone-based adhesive agent and a polyvinyl butyral adhesive agent, respectively, the inner electrode member 4 and the outer electrode member 5 constitute a first electrode, and the annular electrode member 3 constitutes a second electrode, and after use, the annular electrode member 3, the inner electrode member 4, and the outer electrode member 5 can be separated from the mounting surface by removing the adhesive layer 2.

On the contrary, as shown in FIG. 1 of Federlin et al., the annular electrode 15 is fixed to the electrostatic chuck using epoxy. Thus, in Federlin et al., the epoxy must be heated to carbonize the epoxy so that the electrode member 15 can be removed. Further, the epoxy resin needs to be heated to about 300 degrees in order to carbonize. When the electrode member and chuck main body are made of aluminum, the aluminum material often deforms or deteriorates in mechanical strength from the heating process at such a high temperature.

Further, it is clear from FIG. 1 of Federlin et al., that a complicated mechanical method is required to separate the inner electrode member 11 and the annular electrode member 15 from the electrostatic chuck. Also in Federlin et al., the base housing 11 is also affected by the complicated mechanical removing process of the electrode members. In addition, the electrostatic chuck including the electrodes 72, 73 and the guard ring 74 are fixed on to the substrate of the base 71 using "crush-type" gaskets as described in FIG. 5 and col. 9, lines 18-44. The guard ring 74 is also spot welded to the base 71. Thus, in order to remove the guard ring 74, the welded part must be separated by a mechanical method. This is similar to problems as described above.

On the contrary, the annular electrode member, the inner electrode member, and the outer electrode member of the present invention are fixed onto the mounting surface through an adhesive layer which is made of one or two materials selected from a silicone-based adhesive agent and a polyvinyl butyral adhesive agent. Thus, the electrode members can be separated from the mounting surface by removing the adhesive layer. Therefore, the chuck main body and the electrode members can be separated from each other after use, and the chuck main body can be recycled. In addition, combining the materials recited in Herchen with Federlin et al. still do not remove the fact that Federlin et al. uses a complicated mechanical operation method to remove the electrodes.

Accordingly, it is respectfully submitted independent claim 1 and each of the claims depending therefrom are allowable.

Further, new claims 10 and 11 have been add to set forth the invention in a varying scope, and Applicants respectfully submit the new claims are supported by the originally-filed specification. In particular, new claims 10 and 11 are supported at least by paragraphs [0032] to [0034] in the corresponding U.S. Publication of the present application. It is respectfully submitted these claims further define over the applied art.

Conclusion

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact David A. Bilodeau (Reg. No. 42,325) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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Attachments:

Abstract -Clean Copy

Copy of PTO/SB/08 Forms

English language Abstracts of Japanese References - Six (6) Copies